MISSOURI COMMISSION ON PATIENT SAFETY
MEETING MINUTES

January 21, 2004
Truman Building – Room 850
Jefferson City, MO

Commissioners in attendance: Gregg Laiben, James Buchanan, Deborah Jantsch, Susan Kendig, Nancy Kimmell, Kevin Kinkade, Scott Lakin, Alan Morris, Kathryn Nelson, Bea Roam, William Schoenhard, Stephen Smith, Barry Spoon, James Utley, Kenneth Vuylsteke, Lori Scheidt, and Tina Steinman.

I. CALL TO ORDER

Dr. Gregg Laiben, Chairperson
The meeting was called to order at 10:15. Silent roll call was taken.

Housekeeping items:

Presentations are scheduled for all topics identified in the Commission's first meeting. A presentation from the Attorney General on Missouri's peer review law will also be given. These presentations will run through March.

Today's handouts include an article that Dr. Utley provided. Other handouts go with today's presentations.

In the meeting minutes, items in **bold face** indicate recommendations for the Commission. That way Commissioners can review previous meeting minutes and quickly identify the recommendations they have made, or on which they have expressed consensus. Commissioners should tell Linda Bohrer if an item from previous meeting minutes in plain text should be stated in bold face. If any such changes are made, Linda will update the web site.

The audience was asked to sign in, and to indicate if they wished to address the Commission.

Review of Draft Minutes from the previous meeting:

Review of the draft minutes from last meeting - Written comments from Kathryn Nelson will be incorporated. MDI will correct any typographical errors. Lori Scheidt submitted two corrections to the follow-up discussion related to the MO Watch presentation. Dr. Utley moved to accept and Dr. Buchanan seconded. The minutes were approved as amended.

II. PRESENTATION ON NUCLEAR ENERGY SAFETY SYSTEM

Mark Elliot, Vice President of Team WD jointly presented with Greg Duffy, President.

Contact info provided:
Mark Elliot ph: 717-578-5023 email melliot@teamwd.com
Greg Duffy ph: 717-309-6465 email gduffy@teamwd.com

Mark Elliot began by briefly mentioning the following:

- Team WD has been in business for about 10 years. Most of their work has been in the nuclear energy industry. He joined the company following experience in the Navy as a nuclear submarine engineer. The commercial nuclear energy industry has emulated the Navy's system of discipline and safety procedures.
- His company began looking at the medical industry about a year ago. Issues and operations are similar to the nuclear industry. As a small employer, they have a stake in the struggle to keep the cost of medicine and health insurance down. They have found little interest from insurance companies in addressing safety issues. They have had conversations with JCAHO. They will be approaching Leap Frog to discuss what they can bring to the patient safety area.
- Team WD urges the PSC to focus on improving patient safety and to implement Team WD work processes. Expect resistance, but overcome it by finding out what motivates people.
- Improvements in human performance are needed in order to keep up with advances in science. Scientific advances create great opportunities but also increase the level of human interaction with intricate processes. Higher levels of human interaction lead to increasing chance of human error.
- The nuclear energy industry has experienced lots of change, starting with the accident at Three Mile Island. In nuclear energy, 5 work practices have been implemented to reduce cost and improve safety:
    1. Verbatim procedure compliance
    2. 3-part communications
    3. Briefs and Updates
    4. Self-checks
    5. Peer-checks

Greg Duffy then took over. Before proceeding with the slide presentation, Mr. Duffy walked the PSC through several interesting exercises designed to expose the effect that different mental models have on how each person acts and reacts to situations. His point was that the work processes that Team WD promotes begin with aligning different mental models in order to facilitate change.

Points from the slide presentation provide a broad outline. Additional information presented:

- Reactions under stress will result in different outcomes when people have different mental models.
- An excellent example of how opposing mental models prevent change is the experience of Dr. Morris with the orthopedic surgeons. Mr. Duffy asked Dr. Morris how hard it was to get all orthopedic surgeons to sign their sights. Dr. Morris acknowledged it was very difficult, and when Mr. Duffy asked why, Dr. Morris

explained that most opponents either assumed signing would take too much time, or that they were not susceptible to error in the first place. Mental models resist change and can be barriers to improvement.

- Human performance exists in 3 categories. The rate of error in skill-based performance is 1 per 100,000 evolutions. This is functioning on auto-pilot, like driving a car or answering the phone. The rate of error in rule-based performance is 1 per thousand. This is like following directions to a location, or carrying out a pre-flight check. In knowledge-based performance, the error rate can be as high as 1 in 2. This is like learning to play a musical instrument or speak a foreign language for the first time. Human performance is improved when people are driven away from knowledge-based performance, and towards rule-based performance, or skill-based performance if possible. The nuclear power industry has worked to force people to function as much as possible at level 2, and avoid level 3 functioning.
- Experience in the nuclear energy industry shows that adoption of zero tolerance for deviation from the safety culture has resulted in lower operating costs.
- The price of failing to improve safety in the nuclear power plants is that a plant will be closed. The pain of failing to comply greatly exceeds the pain of compliance.
- Similarities between the nuclear power industry and the medical industry include the high level of integration between systems. Change in one system will affect change in other remote systems.
- The nuclear power industry requires 4-6 days of training for all workers, every 6 weeks.
- A latent organizational weakness exists because of the way you do business. It turns into an error precursor eventually. Examples include policies or incentive programs that exceed human capabilities, or procedures that don't work and therefore aren't followed.
- Examples of error precursors include the number of hours worked, the work environment, the complexity of the task, etc. When two doctors want their surgical table laid out differently for the same operation, this is an error precursor. Other staff won't know what to expect and are therefore set up to fail.
- Behaviors that seek out weaknesses are the best defense against error. Equal perceived power to communicate problems or issues is a defense against error.
- An initiating event is something in normal daily events sets off a cascade of errors. Emergency surgery is an example of an event that occurs daily but which is highly prone to error, due to latent organizational weaknesses, error precursors and no defense against errors.
- Work practices that add defense against error are those that help avoid human error, align mental models and catch deviations before harm occurs.
- 3-part communication is exemplified by the way pilots and control towers talk to one another. There is a statement, the statement is repeated, and the repetition is acknowledged.
- Briefs are pre-procedure reviews of the plan of action. Updates are an interruption of an ongoing process for purposes of communicating critical information to all team members. A hallmark of updates is that any member of the team, regardless of seniority or training, can interrupt the process to provide critical information.
- Self-check is time to stop and reflect before proceeding.

- Peer-check is helping others do the right thing. In the nuclear power industry, if the consequences of error are not tolerable, there will be peer-check.

OPEN DISCUSSION:
PSC members acknowledged that everything discussed so far is in place at some level in a hospital setting. Sometimes procedures are not kept up to date. It's hard to reconcile the ideal with real life. Failure to keep procedures up to date and failure to force compliance are latent organizational weaknesses. The nuclear power industry has people who are assigned to keep procedures up to date, and has the power to force compliance. In the medical industry, there are lots of experts promoting best practices, but there is no person or entity with power to assure continual renewal or force compliance.

Q: Some hospitals are safer than others. The US Navy is safer than the Soviet Navy was. Why was the US Navy less prone to nuclear submarine accidents than the Soviet Navy?
A: Early in its history, the US nuclear sub fleet adopted the culture of a particular submarine, characterized by every team member empowered to improve team performance. The Soviet Navy was characterized by strict hierarchy, had no standard procedures and also invested less in physical safety features, such as adequate shielding. The US Navy has lost 2 submarines since the 1960's.
Q: Are workers in nuclear plants employees? In hospitals, they're not, and they can't really be controlled.
A: Most workers in a plant are employees, but there are always some contract workers. Contractors are held to the same standards as everyone else. They get the same training and are subject to the same consequences for any error. There are unique hurdles in healthcare, but the primary hurdle is clearly to get people to change their thinking. As more hospitals and health care settings adopt strict standards for verbatim procedure compliance, it will become harder for physicians to refuse to comply. Pressure can play a roll, in that the pain of noncompliance finally becomes great enough to force compliance.
Q: No one died in Three Mile Island. How many people could have died?
A: Thousands.
Q: In health care, the number of people per week injured or killed due to preventable errors is equivalent to the number killed in the World Trade Center. What will it take to convince the general public that this isn't tolerable?
A: In health care, each accident has a limited scope - 1 person at a time is hurt. Highway travel is the same - 1 wreck hurts or kills a few people. Mass death and destruction associated with a single event doesn't happen, and hysteria never builds up. In contrast, public safety in aviation and nuclear power has been driven by powerful public demand. One plane crash affects hundreds of people at a time, and grabs public attention.
Q: Is a nuclear power plant worker more afraid of supervisors, or of a nuclear event? In other words, what really motivates their compliance with procedure?
A: There are rewards for meeting safety expectations, but usually it's fear of supervisors. That only works when supervisors have the power to make noncompliance very costly to the worker.
Q: In the nuclear power industry, are you able to garner the resources you need in order to get the performance you seek?

A: Yes. The industry is very competitive. Uranium is actually very cheap. The labor ratio is high, but dropping. When managers put work processes and practices in place that allow people to succeed, it pays off. This is not easy to do.

III. PRESENTATION ON THE EFFECTS OF ORGANIZATIONAL CONTEXT ON NURSES AND THEIR WORK

Kathy Ballou, Assistant Professor, UMKC School of Nursing

Ms. Ballou primarily spoke from her slides. Some additional points she made were:

- Resistance is prevalent in health care, but not talked about.
- Most research into the nursing shortage crisis is done to recruit and retain nurses. This study was unique in the U.S. for looking at the social and political systems in place in most settings where nurses work. Britain and New Zealand are ahead of U.S. researchers in exploring this topic.
- The research is based on information collected for a particular client hospital, for purposes of an earlier, more traditional study.
- Nurses are the largest provider group in the U.S. and are at the point of care delivery 100 percent of the time.
- The primary focus of this study was nurses, and information on how they are affected. However, physicians are also affected in the current paradigm characterizing most U.S. hospitals.
- People interviewed for the study were extremely fearful of being identified.
- The distinctions between different levels of nurse training were not recognized. Nurses were not referred to as professionals, but as "functions".
- Nurses are perceived, and perceive themselves, as powerless within the organization. In reality, they are not powerless. The power they exert is less visible.
- In the study hospital, there was a breakdown in what was said about the importance of quality and democratic governance, and what was actually acted out.
- Physicians were fearful of any restrictions on their ability to deal with individual situations, but were also passionately pro-patient. Expressed frustration with administration as "Big Brother".
- Management exerts power by using jargon with people who are not familiar with the terminology.
- Staff was highly aware of the monetary and status imbalances between physicians and everyone else.
- In attempting to implement clinical pathways, administration told nurses they were responsible for "policing" physician compliance with pathways, but were not given any power or authority to compel compliance. The hospital spent $2.3 million on pathways and it was a total loss. Some physicians actually grieved the loss of ability to work collaboratively with nurses.
- "Working to rule" means following the letter of the law without regard for actual outcomes, even when undesired outcomes are obviously going to result.
- The perception that nurses don't think provides nurses in exploitative environments with a tool for resisting change.

- Paternalism towards patients was evident, but the impact of the demoralization of nursing staff on patient safety wasn't measured. Nurses admitted they were not reporting errors due to fear of retaliation and litigation.
- Having a VP of Nursing is not working as a solution to empower nurses. Administration and physicians need to listen to staff nurses.

OPEN DISCUSSION:

Q: What one practical recommendation do you have for the PSC?
A: The first step towards radical change is awareness. No one's talking about power imbalance. **Get all stakeholders to discuss the issues together.** Imposition of change from above leads to resistance. This is already evident in the health care system. There is system wide fear of talking about error and power imbalance. Hospitals have a perverse stacked hierarchy. The position of Nursing VP is dysfunctional. Floor nurses need to be involved with management.
Q: Staff nurses must be capable of, rewarded for and empowered to think critically. How does the PSC balance the benefit of protocols with individual reflective thinking?
A: Get staff nurses involved with every step of developing and adopting best practices. The person who must carry out the work should be involved with designing the work. Physicians have said the same thing, but they were heard and nurses have not been heard.
Q: Do protocols have a place in patient safety?
A: Yes.
Q: What was the client hospital's response to the study recommendations?
A: Hospital executives were given a summary of the first study, which they have so far failed to act on. They were not given a report after the second study. The study has been used to raise awareness in Kansas City and the region. Representatives of the client hospital have been present at previous presentations.

Q: With regard to rule-based vs. knowledge-based performance, the healthcare system has tried knowledge-based performance, and it results in 44 thousand deaths per year due to preventable errors. Yet you insist that nurses must function from a knowledge-based position. At what level do you encourage rule-based vs. knowledge-based performance? Presenter did not reply to this question. Susan Kendig responded that protocols have a roll, but staff nurses must know that they have administration's support to apply knowledge when appropriate. They must know that their decisions are valued. The presenter agreed with these comments.

Broke for lunch at 1 PM and reconvened at 2 PM.

IV. PATIENT SAFETY AT SSM HEALTHCARE

Dr. Paul Convery, Chief Medical Officer at SSM Healthcare

In addition to the information in his slide presentation, Dr. Convery made the following points:

- The Mission Statement at SSM was written by employees over about a year. The Mission Statement is behind the goals, processes, reporting metrics, etc. used at SSM. Benchmarks reflect the connections between the 3 supporting blocks of Exceptional Clinical Outcomes, Exceptional Satisfaction and Exceptional Financial Performance.
- The term "culture of patient safety" is amorphous and requires a definition. Among other things, staff at SSM has decided that if work cannot be done safely, it won't be done. Also, "transparency" means that there is no fear of retribution. The philosophy behind SSM's patient safety plan states specific conditions under which discipline will be applied as a result of errors. It's intended to limit the use of discipline for errors. There is not a list of the things that apply when a person "demonstrates a pattern" of failing to follow safe practices. Rather, it's a general statement used as a guiding principal for the formulation of policies and procedures.
- Collaboratives disseminate information about best practices across the large organization. They help the entire organization respond appropriately to issues. They address clinical goals and focus on strategies that are working.
- Collaborative teams tackle bite-sized problems. There are lots of small teams that engage in brain-storming, measurement and data collection. Teams are floor staff and employees, not executive staff. They share both successes and failures openly. They must be evidence-based, and they must fit with the Mission Statement.
- A "listening post" is who or what does the organization listen to in order to know about issues that need to be dealt with. A "listening post" can be internal or external to the organization.
- The culture of healthcare is to do work-arounds, as opposed to fixing problems.
- The recommended practices started with the Academy for Health Research and Quality. Ease of application was a determinant for which of the AHRQ initiatives to pursue. Issues from JCAHO and other sources have been added over time. The goal of the recommended practices is for all SSM facilities to do the same things the same way. Three at a time are picked for about 6 month periods.
- One of the recommendations is to implement effective patient disclosure of any unanticipated outcomes. This risks litigation and has been strongly resisted. SSM management is committed to transparency with the patient.
- Although physicians resist "cookie-cutter" medicine, in reality, every effective doctor has their personal protocols that they stick to. They have "their way" of doing things. The problem is they don't keep "their way" up to date. Once physicians see the outcomes of good, updated protocols, they buy-in.

Q: Who writes the protocols?
A: Line staff, doctors and collaborative teams. This increases buy-in.
Q: Does it work?
A: Yes.

- Collaborative teams try to keep protocols as short and simple as possible.
- Safety competes with other obligations, and requires dedicated staff and executives. The quarterly "State of Safety" report is one way to foster buy-in. It helps to spread information and culture through telling stories and repeating stories.

- Some medical abbreviations date back to 16th century Latin. There is professional pride in knowledge of what these abbreviations mean, even though they are frequently misunderstood and contribute to errors. SSM picked four specific abbreviations to target for removal: "U" for unit, "QD" for each day, trailing zeros after the decimal point, and the addition of leading zeros. All SSM facilities are required to implement these changes. Some hospitals are close to 100 percent compliance. Other hospitals have struggled with how to get doctors to comply. The solution in this case was repetition and peer pressure.
- To deal with the increased chance of error in hand-offs at patient transition points, SSM required all facilities to eliminate blanket "continue with medications" orders with patient transfers. Transfer orders must list specific medications. Again, some facilities are close to 100 percent compliance.
- SSM's automated pharmacy system detects hundreds of near misses weekly. In using bar codes, it was critical that nursing and work-flow issues match the system that was purchased. Technology procurement should be approached conservatively. Too many institutions have purchased expensive technology systems that weren't matched to work-flows and the needs of the organization. The organization must have uniform standards and processes first.

OPEN DISCUSSION:

Q: Does SSM try to get into the medical schools and teach these best practices and safe behaviors?
A: Several SSM hospitals are teaching institutions, so the message is getting to the schools.
Q: What about sharing with all health care settings, including those outside the SSM system? Recall the issue that's been discussed where working in multiple settings requires knowledge of multiple protocols for the same thing, which leads to errors.
A: SSM is working hard to push the message out to Missouri and Kansas hospitals, even competitors.
Q: Could this be something that provider networks should do?
A: That's one way to compel adoption of best practices, but SSM hasn't really approached managed care companies.
Q: Where is SSM in computerized physician order entry ("CPOE")?
A: Not currently pursuing this technology.
Q: How much would it cost? Is cost preventing adoption of such a system?
A: There's much debate on cost. Some price estimates are $160 to $180 thousand for one institution, or $5 to $10 million for a system the size of SSM.
Q: Shouldn't hospitals make this investment if it improves safety?
A: SSM is paying attention to when clinicians will be ready for this technology. Anticipate that the demand from incoming new doctors will change the climate almost overnight. Leap Frog is pushing CPOE, but there are lots of stories about systems thrown together that cause more errors than hand written orders. Most hospitals simply can't afford it, even though it's commonly felt that hospitals will be in a very bad position in the long run if they don't have CPOE.
Q: Is the investment in patient safety driven by mission or by fear of litigation?
A: SSM acts on the three blocks supporting the Mission, and patient safety fits all three. Not aware of any safety-related proposal that applies a return-on-investment standard.

Q: With regard to patient disclosure, is litigation considered? Is SSM adopting patient disclosure across the board?
A: Yes and yes.
Ken Vulystke confirmed that SSM is committed to fixing problems. Dr. Convery expressed gratitude at Mr. Vulystke's comments.
Q: Does SSM use temporary nurse staffing agencies? What's the turnover rate for SSM facilities?
A: Turnover is about 8.2 percent in St. Louis, and about 14 percent system wide. SSM is in the process of eliminating use of nurse staffing agencies because they aren't immersed in the culture that SSM is committed to.
With regard to drug entry and reconciliation in patient transfers, this issue has come up repeatedly in PSC meetings, including today. The Commission should produce a recommendation on this issue.

V. COMMISSION DISCUSSION OF IDEAS, TODAY'S PRESENTATIONS AND DIRECTION

Kathryn Nelson distributed two sheets to all Commissioners. One sheet was a draft of four guiding principals. The other sheet was a grid of issues or topic areas, with space for ranking.

The draft guiding principals:

- **generated discussion about a permanent patient safety body in Missouri**
- **discussion of the importance of a public-private partnership**
- Academic interest and support was also mentioned, and **it was suggested that the academic community could help leverage grant funding for a permanent body.**
- Employers were mentioned as an important stakeholder not currently represented. **Kathryn asked Commissioners to give thought to additional stakeholders that should be included in a patient safety initiative**.
- **It was noted that the guidelines should say something about "elimination of error" and "improvement of patient safety". These are buzzwords, but they express the current thinking.**

Issue grid:

- Kathryn asked Commissioners to rank the issues using a scale of 1 to 4 for the ability of the PSC to have an impact.
- In addition, it was suggested that Commissioners concurrently rank each issue on importance, also using a 1 to 4 scale.
- Kathryn clarified that modification of the peer review law was meant to be captured under the issue of "protection of safety information".
- Commissioners were asked to hand in their rankings or send them before the next meeting. At the next meeting, the collective thinking of the group can be presented.
- In addition, if there is an area that any Commissioner wants to add, they should do so, as this is just a draft document.

VI. PRESENTATION ON AVIATION CREW TRAINING AT THE UNIVERSITY OF MISSOURI-COLUMBIA HOSPITAL

Jeff Hill, Crew Training International, Laurel Destins, RN, Clinical Nurse Specialist, UMC ICU

In addition to the points from the handouts, Mr. Hill and Ms. Destins made the following points:

- Communication errors have been identified as a leading cause of aviation accidents. Planes have recorders that help to prove these kinds of problems lead to errors.
- Pilots are required to have annual training at a minimum.
- Plane crashes kill hundreds of people at a time.
- When the aviation industry instituted communication protocols 20 years ago, it was not popular. Captains felt they were losing their authority. Discussing concepts instead of skill sets was foreign.
- Currently error rates in aviation are at or above the "sixth sigma", at .43 deaths per million miles. Defect rates in treatment of lower back pain are below one sigma, or nearly a 1 to 1 ratio of defects per opportunity.
- Efforts to improve patient safety through reduction of errors should also be viewed as opportunities to capitalize on all the things that go right every day.
- A good standardized procedure spreads knowledge and is flexible. A good procedure does not restrict innovation.
- It's OK to make an error, but it's not OK to fail to do something about what caused the error.
- Cultural change doesn't have to take 20 years.
- Aviation self-reporting to NASA protects pilots from punitive measures. Reports are not sent to the FAA because that's a regulatory agency.
- The Life Wings program at UMC builds the habits of crosscheck and communication.
- Practitioners use checklists all the time. Each practitioner just has a different one. This isn't helpful because knowledge in a person's head is absent when the person is absent, unless it's written down. This is where checklists and protocols come in handy.
- The concept of who's on the health care team is critical. To make a multi-faceted system run smoothly, all team members must be acknowledged, empowered and held accountable.
- Debriefings, may eliminate a lawsuit.
- A brevity lexicon is the team's agreement on what code words and phrases mean.
- Branding is a way of spreading the word. At UMC, Life Wings participants are given pins to wear.
- The ICU took 8-10 hours to develop their pre-briefing format. It's built around the unit clerk because that person is a communication hub. It took several weeks for these to become standard procedure.

- The team decided that it would be beneficial for all attending physicians and residents to use pre-printed orders. Compliance is approaching 100 percent. When compliance dips, further announcements are made.
- Soon, 200 residents will be invited to participate in the Life Wings program.

OPEN DISCUSSION:

Q: Will patient and family be incorporated on the teams?
A: Not yet. Pre-briefings involve many patients, not just one. Not a setting for family involvement. Families are brought in when the doctors do their rounds. Patients are encouraged to use the PSN.
Q: How does the pre-briefing fit with HIPAA privacy compliance?
A: Team members refer to patients by room number, not name. Room doors are closed or cracked during pre-briefing, which again is only a couple of minutes long in most circumstances.
Q: What kind of support is coming from the medical school dean?
A: Medical students are part of the team. In addition, students from the Nursing school and the Health Informatics program are gradually being worked into the process.
Q: Do pilots train on team skills? Do simulators test more than one pilot?
A: Yes to both. Crews are trained and tested as crews, not individuals.
Dr. Laiben commented that this has implications for healthcare. In fact the selection for medical school prefers non-team players.

Q: Was there ever a time when pilots were certified and didn't need further training?
A: Not since the 1930's.
Q: What kind of data collection is the ICU doing?
A: Hard to do. It's hard to measure what doesn't happen. Self-reporting is pretty new. One example of data collection is the use of 3-way communication for order dictation. In December, the ICU started using this technique to assure that no orders were missed in dictation. Tracking this process shows that an average of 3 orders per day would have been miss-communicated or missed completely without the read-back process.
Scott Lakin encouraged the ICU team to keep collecting data because it matters to policy makers.

There was no public comment. The meeting was adjourned at 4:30 PM.